

A bibliometric analysis of the literature on the market
orientation of higher education institutions

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Abstract

Purpose

The purpose of this paper is to provide a bibliometric analysis of the research on market orientation (MO) as it relates to higher education institutions (HEI).

Methodology

The Scopus database was used to identify 170 relevant publications over a thirty-year period. The Scopus database functionality and VOSviewer software were subsequently used to address the research purpose.

Findings

Identifies the journal that has published the maximum number of papers on market orientation as it relates to higher education; the years which have the maximum number of papers published; the most cited papers, authors and journals; the most prolific authors and the most prolific higher education institutions and countries; the authors which have co-authored the maximum, with other authors; the countries' authors which have co-authored the maximum with the authors of other countries; the most frequently appearing keywords and which citations, journals, authors have been co-cited to the greatest degree.

Research Implications

This study contributes to the existing literature on MO in HE. A comprehensive and reliable picture of the research area is provided using bibliometric techniques. The results can help in guiding authors interested in conducting future research on this topic.

Keywords

Market orientation, market orientated, market oriented, higher education

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Introduction

The marketing concept, that is the philosophy underpinning the discipline, is that customers are a central aspect of organisations (Wrenn, 1997; van Raaij & Stoelhorst, 2008). Market orientation (MO) is argued as the implementation of this marketing concept (Kohli and Jaworski, 1990); putting the philosophy into action. The link between MO and a multitude of different measures of the performance of higher education institutions (HEI) has been empirically established (Abou-Warda 2014; Casidy, 2014; Modi and Mishra, 2010). Furthermore, MO is argued as a relevant strategy for HEIs to face the changes arising in their environment (Gleason, 2018; Tran et al., 2015; Ross et al., 2013; Hemsley-Brown and Oplatka, 2010; Akonkwa, 2009; Rivera-Camino and Molero Ayala, 2009; Flavián and Lozano, 2007).

There have been various conceptualisations of MO; Lafferty and Hult (1999, p. 94) outline that “five different major attempts to conceptualise the construct have emerged out of the scattered research”. While van Raaij and Stoelhorst (2008) detail six influential definitions each with a different conceptualisation. However, the behavioural approach proposed by Kohli and Jaworski (1990) and the cultural approach by Narver and Slater (1990) are considered seminal (Vaikunthavasan et al., 2019).

Kohli and Jaworski (1990) describe MO as a set of marketing activities or behaviours (Gray & Hooley, 2002; Lafferty & Hult, 1999) hence its description as the behavioural approach. Specifically, Kohli and Jaworski (1990, p. 6) outline that “Market orientation is the organization-wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organization-wide responsiveness to it”. Narver and Slater (1990) however describe MO as a culture or philosophy (Gray and Hooley, 2002). Specifically, Narver and Slater (1990) outline “Market orientation is the organizational culture that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and, thus, continues superior performance for the business” (Narver and Slater, 1990, p. 21).

However, HEIs are different from commercial organisations which is the context in which MO has been conceptualised (Akonkwa, 2009). Marketing orientation needs adaptation to the field of higher education (De Sabando et al., 2018). Thus, research on MO in a HE context has grown with a greater number of articles in recent years (Dwyer, 2019). Akonkwa (2009) provides an extensive review of the literature arguing that MO is a relevant strategy for HEIs while acknowledging the consequential problems in its implementation in this context as well as identifying a research agenda to aid its success. Guilbault (2016) similarly identifies issues with importing the concept of MO into a HEI context as well as outlining how this can be accomplished. Dwyer (2019 and 2021) also provides structured reviews of the literature relating to HEIs and market orientation.

However, no bibliometric analysis has yet been forthcoming. Bibliometric methods are an established and integral part of the methodology in research evaluation (Ellegaard and Wallin, 2015). Zupic and Čater (2015, p. 1) argue “such methods introduce a measure of objectivity into the evaluation of scientific literature and hold the potential to increase rigor

...”. Furthermore, they can complement qualitative structured literature reviews (Zupic and Čater, 2015) allowing a disciplines examination in a quantitative manner (Dolhey, 2019). A bibliometric analysis can provide “a systematic, transparent and reproducible review process” (Zupic and Čater, 2015, p. 1). Thus, this paper aims to provide a one-stop overview (Donthu et al., 2021) of MO in the HE literature via a bibliometric analysis. The paper will address this aim via the following questions:

- Q1. Which journals have published the maximum number of papers on market orientation as it relates to higher education?
- Q2. In which years, have the maximum number of papers have been published?
- Q3. Which are the most cited papers, authors and journals?
- Q4. Who are the most prolific authors and the most prolific higher education institutions and countries?
- Q5. Which authors have co-authored the maximum, with other authors?
- Q6. Which countries’ authors have co-authored the maximum with the authors of other countries?
- Q7. Which are the most frequently appearing keywords?
- Q8. Which citations, journals, authors have been co-cited to the greatest degree?

The remainder of this paper will provide an outline of the methodology, the findings from the bibliometric analysis and finally the discussions and conclusions.

Methodology

The Scopus database was used to search for papers that focused on market orientation as it relates to higher education institutions.

The focus was specifically on MO as it relates to HEI. Thus, HEIs can be considered as the unit of analysis. Therefore, articles that looked at higher education policy and or a broader look at the marketisation of higher education and or programmes/courses with a market focus and or about the conceptualisation of university or HE were excluded unless they also dealt with MO as defined above.

Scopus is the largest abstract and citation database of peer-reviewed literature with over 25,000 journals from more than 5,000 international publishers (Scopus, 2021). In June 2021 a search of publication titles, abstracts or keywords in Scopus using the following keywords was thus undertaken; "market orientation" OR "market-orientation" OR "market orientated" OR "market-orientated" OR "market oriented" OR "market-oriented" AND "higher education" OR “university” OR “college”. Furthermore, Scopus automatically searches equivalents e.g. behaviour or behaviour. The search included all publications between 1990 and 2020.

The search generated 651 papers. To confirm whether the papers in the search results were related to the topic in question the abstract of each paper was read. Books and book chapters and non-English language publications were excluded thus the refined number of papers was 170. This was the final number subjected to the bibliometric analysis.

The Scopus functionality was utilised to generate the findings to research questions 1 to 4. For research questions 5 to 8, the co-authorship network analysis, inter country co-authorship network analysis, keywords co-occurrences network analysis and co-cited authors analysis the VOS Viewer software was used. VOSviewer is a free software tool which is used for creating maps based on network data. To understand the software and how it works see Van Eck and Waltman (2010).

Findings

Q1. Which journals have published the maximum number of papers on market orientation as it relates to higher education?

The 170 papers on market orientation as it relates to higher education belong to 107 journals. The figure shows the 16 journals that have published more than one paper in this research area with all other journals publishing one paper. The journal with the greatest number of publications is the Journal of Marketing for Higher Education. Of the journals that have published more than two papers; nine have a clearly identifiable education focus including its management and four have a marketing focus.

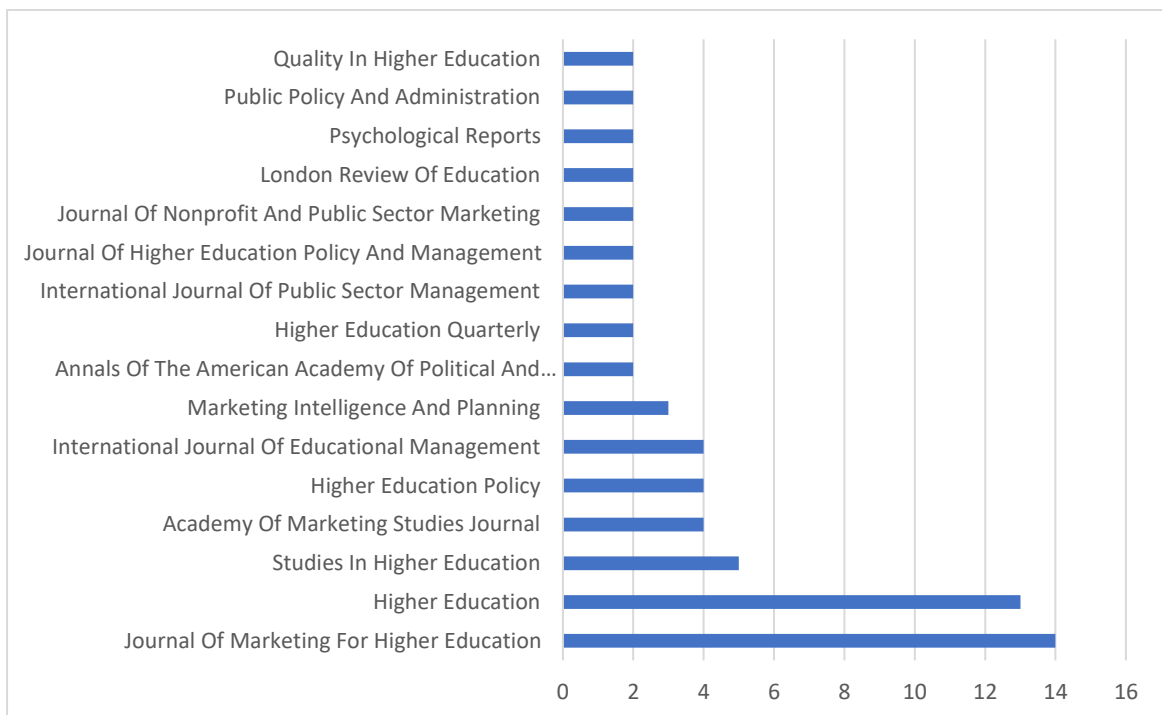


Figure 1. Journals that have published papers on market orientation as it relates to higher education

Q2. In which years, have the maximum number of papers have been published?

Figure 2 shows the number of papers published from the year 1993 to 2020 (with no papers published in between 1990 and 1993 and one paper in press for publication in 2021). A total of 95 papers were published between 2011 and 2020 – a ten-year period whereas 75 papers were published between 1990 and 2010 – a twenty-year period. The highest number of papers were published in 2013 with 14 and the second highest number in 2020 with 12 papers.

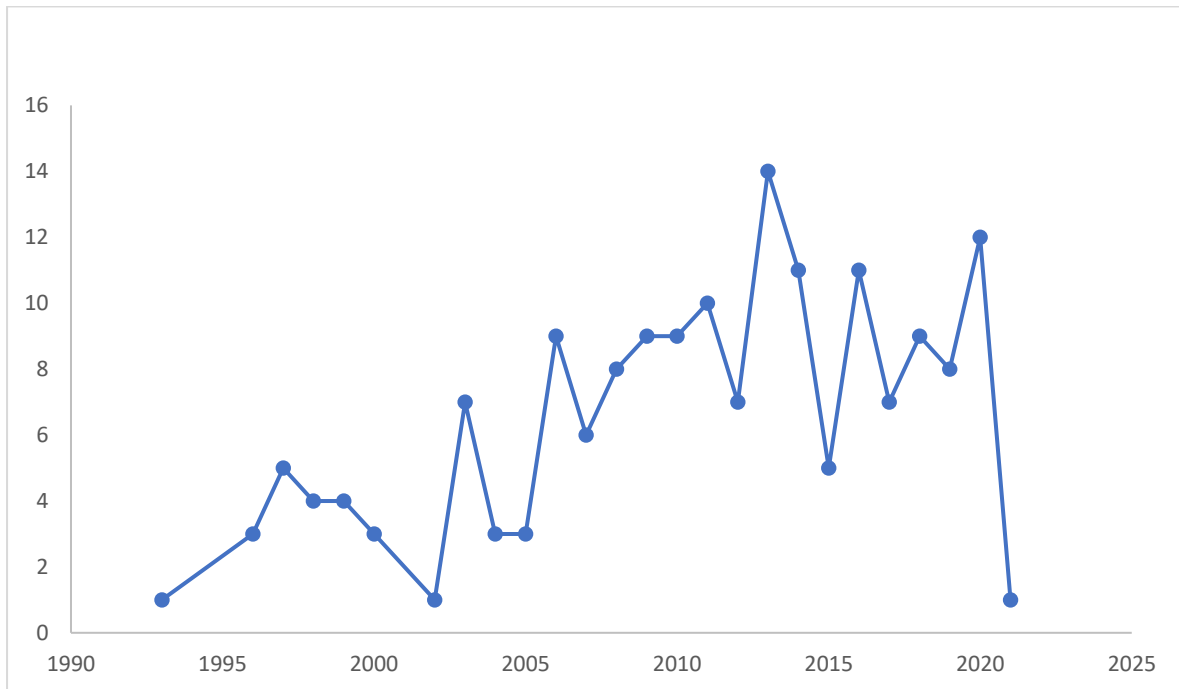


Figure 2. Years papers have been published

Q3. Which are the most cited papers, authors and journals?

A list of the twenty most cited papers is presented in Table 1. The most cited paper totalling 136 citations is ‘Entangled in academic capitalism? A case-study on changing ideals and practices of university research’ by OH Ylijoki. This paper examines the impacts changing funding patterns have on university research, on research units and researchers concluding that market-orientation does not displace traditional academic values and practices. The citation count of 136 only includes the number of times the publication was cited by content that Scopus covers. Scopus while extensive does not count citations from all publications. Thus, the number of citations for the same paper utilising google scholar will be higher reflecting its broader coverage in terms of sources compared to Scopus (Harzing, 2013) while the citations that are covered by Scopus are argued as having a higher scientific impact (Scopus, 2021).

Year	Publication	Journal	Authors	Citations
2003	Entangled in academic capitalism? A case-study on changing ideals and practices of university research	Higher Education	Ylijoki, O.-H.	136
2009	Education as service: The understanding of university experience through the service logic	Journal of Marketing for Higher Education	Ng, I.C.L. and Forbes, J.	122
2011	An analytical framework for the cross-country comparison of higher education governance	Higher Education	Dobbins, M.; Knill, C. and Vögtle, E.M.	113
2007	University student satisfaction: An empirical analysis	Journal of Marketing for Higher Education	Clemes, M.D.; Gan, C. and Kao, T.-H.	111
2014	Academics job satisfaction and job stress across countries in the changing academic environments	Higher Education	Shin, J.C. and Jung, J.	110
2004	Conceptualizing total quality management in higher education	TQM Magazine	Sahney, S.; Banwet, D.K. and Karunes, S.	104
2005	Academics' organizational characteristics and the generation of successful business ideas	Journal of Business Venturing	Grandi, A. and Grimaldi, R.	101
2005	Academic nostalgia: A narrative approach to academic work	Human Relations	Ylijoki, O.-H.	93
1997	TQM in higher education - a review	International Journal of Quality and Reliability Management	Owlia, M.S. and Aspinwall, E.M.	84
2007	Economic and non-financial performance indicators in universities	Public Management Review	Guthrie, J. and Neumann, R.	81
2016	Constraining entrepreneurial development: A knowledge-based view of social networks among academic entrepreneurs	Research Policy	Hayter, C.S.	78
1996	Quality in higher education - A survey	Total Quality Management	Owlia, M.S. and Aspinwall, E.M.	77
2003	Allowing the market to rule: The case of the United States	Higher Education Quarterly	Dill, D.D.	74
1998	Do universities that are more market orientated perform better?	International Journal of Public Sector Management	Caruana, A.; Ramaseshan, B. and Ewing, M.T.	72
2006	Linking a service-driven market orientation to service quality	Managing Service Quality	Voon, B.H.	65
2010	Market orientation in universities: A comparative study of two national higher education systems	International Journal of Educational Management	Hemsley-Brown, J. and Oplatka, I.	64
1993	The market-oriented university and the changing role of knowledge	Higher Education	Buchbinder, H.	62
2006	Entrepreneurialism in Japanese and UK universities: Governance, management, leadership, and funding	Higher Education	Yokoyama, K.	54
2009	Raging against or with the private marketplace?: Logic hybridity and eco-entrepreneurship	Journal of Management Inquiry	Mars, M.M. and Lounsbury, M.	53
2002	The sacred and the profane in recent struggles to promote official pedagogic identities	British Journal of Sociology of Education	Beck, J.	53

Table 1. The most cited papers

Of interest here is that the first paper to have ‘market orientation’ in the title is only the fourteenth most cited paper. Reviewing the papers preceding this paper in table 1 indicates that MO was not their only or central theme. The top twenty most cited papers received 1707 citations in total ($M = 85.35$) with the next twenty papers receiving 680 citations ($M = 34$). The bottom twenty paper did not receive any citations.

Moving on to the most cited authors Table 2 presents the authors who have the greatest number of citations from their publications in this research area. The table also indicates the number of publications the author has had in this research area of MO and HEI as well as the number of authors they have co-authored with.

Author	Publications	Citations	No. of co-authors
Ylijoki, O.-H.	3	253	2
Aspinwall, E.M.	2	161	2
Owlia, M.S.	2	161	2
Dobbins, M.	2	123	2
Forbes, J.	1	122	1
Ng, I.C.L.	1	122	1
Caruana, A.	2	119	4
Ewing, M.T.	2	119	4
Ramaseshan, B.	2	119	4
Knill, C.	1	113	2
Vögtle, E.M.	1	113	2
Jung, J.	2	112	1
Clemes, M.D.	1	111	2
Gan, C.	1	111	2
Kao, T.H.	1	111	2
Shin, J.C.	1	110	1
Banwet, D.K.	1	104	2
Karunes, S.	1	104	2
Sahney, S.	1	104	2
Grandi, A.	1	101	1

Table 2. The most cited authors

Table 3 presents the twenty most cited journals in relation to publications on market orientation as it relates to higher education.

Journal	Publications	Citations
Higher Education	13	656
Journal of Marketing for Higher Education	14	388
TQM Magazine	1	104
International Journal of Public Sector Management	2	103
Higher Education Quarterly	2	102
Journal of Business Venturing	1	101
Human Relations	1	93
International Journal of Educational Management	4	93
International Journal of Quality and Reliability Management	1	84
Public Management Review	1	81
Research Policy	1	78
Total Quality Management	1	77
Annals of The American Academy of Political and Social Science	2	71
Managing Service Quality	1	65
Studies in Higher Education	5	62
Marketing Intelligence and Planning	3	58
Higher Education Policy	4	55
British Journal of Sociology of Education	1	53
Journal of Management Inquiry	1	53
Journal of Nonprofit and Public Sector Marketing	2	52

Table 3. The top twenty most cited journals

Of note here is the journal Higher Education has significantly more citations than the Journal of Marketing for High Education despite having one less publication.

Q4. Who are the most prolific authors and the most prolific higher education institutions and countries?

The 170 papers were authored by a total of 350 authors. All authors that have published more than one paper in this research area are presented in figure 3. The most prolific authors on MO in a HE context are Kevin L. Hammond a Professor of Marketing at the University of Tennessee at Martin College of Business and Public Affairs and co-author Robert L. Webster Professor of Accounting at Ouachita Baptist University, Arkadelphia, Arkansas, United States with seven papers. The joint third most prolific authors are: Carlos Flavián a Professor of Marketing at the University of Zaragoza, Spain; Harry Harmon of the University of Central Missouri (a co-author of Webster and Hammond); and Javier Lozano a Professor of Economics at the University of the Balearic Islands (a co-author of Carlos Flavián).

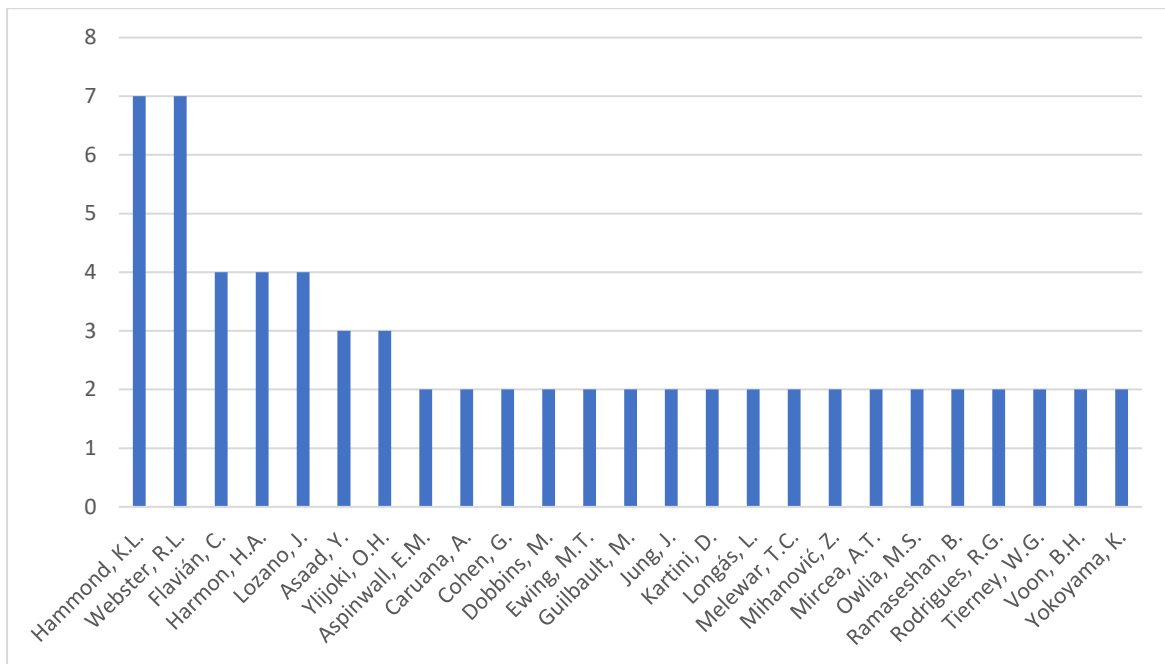


Figure 3. The most prolific authors

Related to the most prolific author the most prolific institutions and countries are presented. Ouachita Baptist University in Arkansas and the University of Tennessee, both in the United States are the most prolific HEIs with seven publications each, all related to the output of Robert L. Webster and co-author Kevin L. Hammond's publications. The University of Zaragoza (with four of the five publications co-authored by Carlos Flavián) and the University of Central Missouri (where Harry Harmon a co-author of Webster and Hammond is based) are the next most prolific HEIs. Brunel University of London, the University of Beira Interior in Portugal, Universiti Teknologi MARA in Malaysia and Griffith University of Australia account for three publications each.

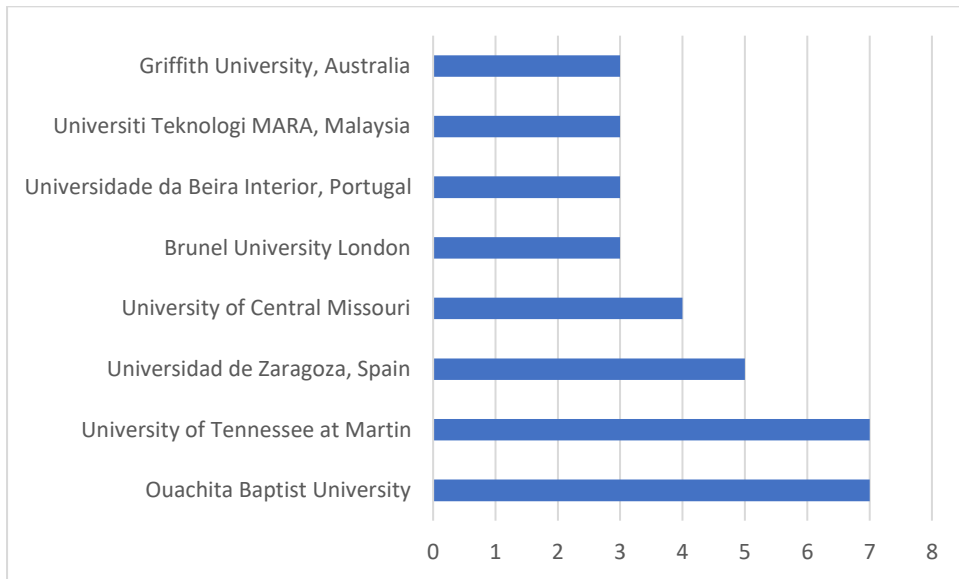


Figure 4. The most prolific higher education institutions

The five most prolific countries are the United States (n=31), the United Kingdom, Australia, Spain and Malaysia accounting for 92 or 54% of all publications.

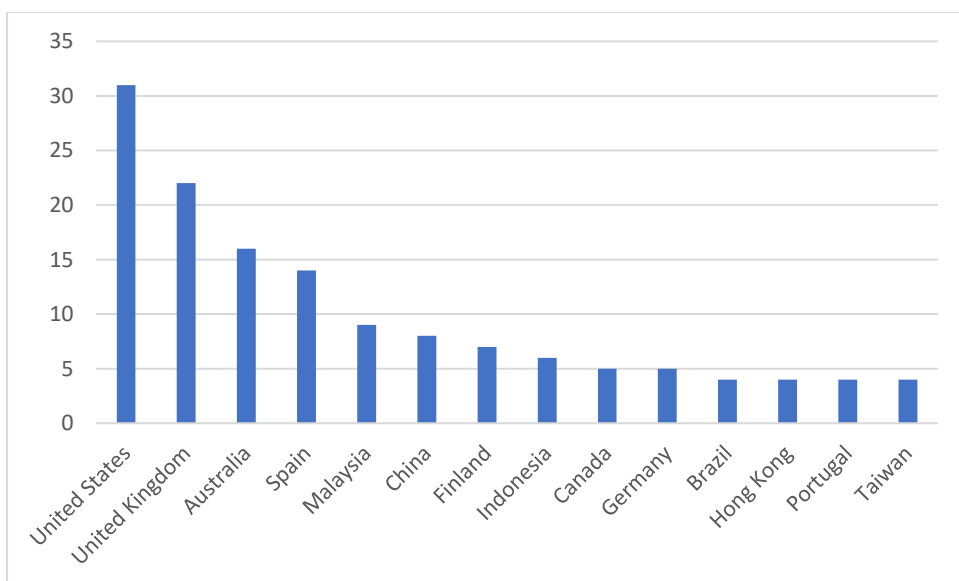


Figure 5. The most prolific countries

Q5. Which authors have co-authored the maximum, with other authors?

The co-authorship network analysis is used to visualise the co-authorship networks among the various authors, and to find out which authors have co-authored with the maximum number of other authors in the data set. In the present study, there were total 350 authors in the data set. To create a network map only those authors who had co-authored at least two publications were included in the data set. By following this criterion 25 authors were identified.

Figure 6 shows the co-authorship network map generated by the VOSviewer software. The figure consists of circles connected to each other with several lines. Those authors who have co-authored with a greater number of authors are assigned bigger circles.

The software places the authors into various clusters. The authors in the same cluster, connotes that they are strongly related to each other, in terms of co-authorship among themselves. In Figure 6 there are a total of 16 clusters. Four clusters have three authors with one cluster containing two authors. All other clusters have only one author thus indicating the authors have more than two publications in this research area but did not co-author with the same authors more than once. VOSviewer's clustering technique is discussed in detail by Van Eck and Waltman (2010).

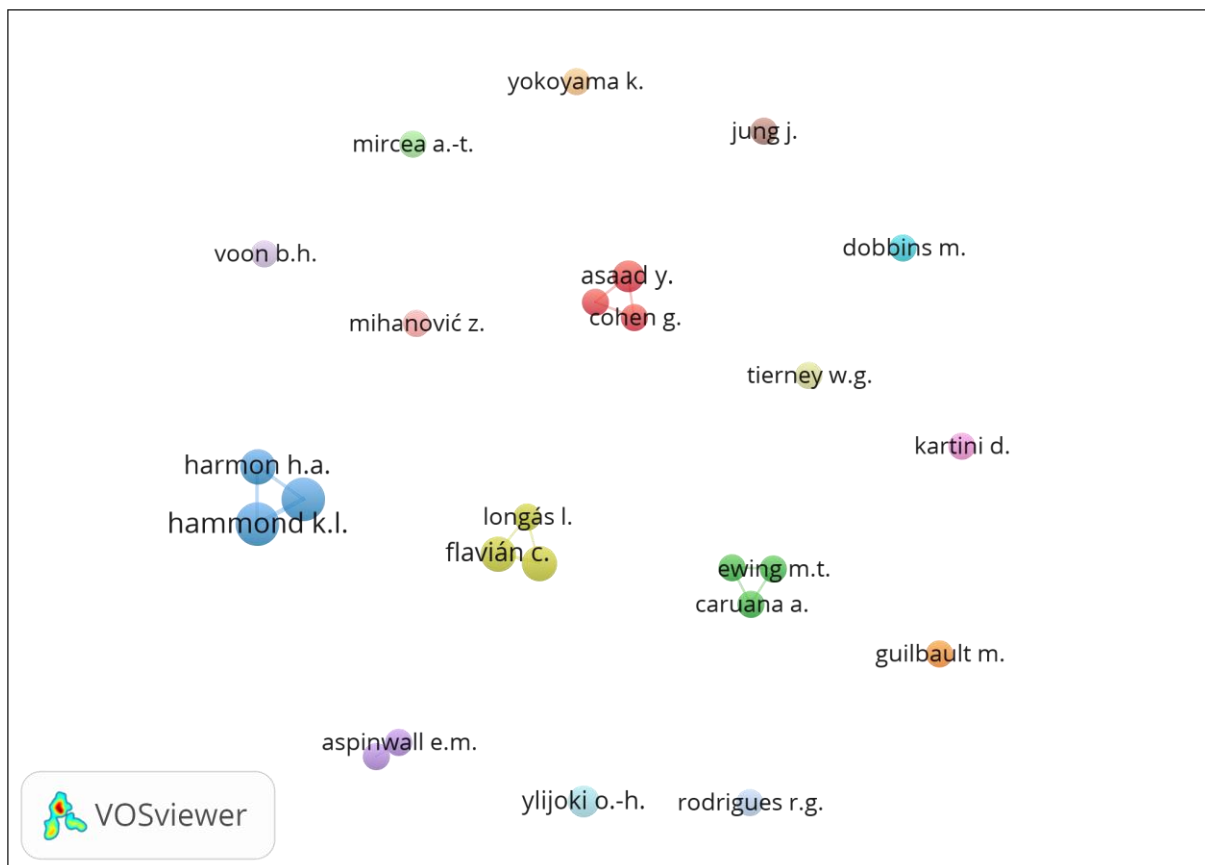


Figure 6 Co-authorship network analysis

Table 4 shows the top ten authors with two or more publications and the number of co-authors each has had (not necessarily different co-authors). Thus, Hammond has had 11 co-authors in total across his seven publications.

Author	Publications	No. of co-authors
Hammond K.L.	7	11
Webster R.L.	7	11
Harmon H.A.	4	8
Flavián C.	4	6
Lozano J.	4	6
Asaad Y.	3	4
Caruana A.	2	4
Cohen G.	2	4
Ewing M.T.	2	4
Longás L.	2	4

Table 4. The top ten co-authors

Q6. Which countries' authors have co-authored the maximum with the authors of other countries?

In this section, the inter country co-authorship network analysis is discussed. This analysis is done to find out that which countries' authors have co-authored with the maximum number of authors from the other countries.

There were a total 52 countries in the data set responsible for the 170 publications. The VOSviewer software found 36 of these countries had authors who co-authored with an author from another country - connected with each other in terms of co-authorship. Sixteen countries thus have authors who have not co-authored with an author from another country.

It was found that the authors of the United Kingdom, Australia, Malaysia, Lithuania and the United States in descending order had co-authored with the greatest number of authors of other countries as displayed in Table 5. Noticeable is how the authors of Lithuania have published with an equivalent number of countries as the United States in this research area despite having significantly less publications.

Country	Publications	Citations	No. of countries co-authored with
United Kingdom	22	689	8
Australia	16	352	6
Malaysia	9	96	5
Lithuania	2	21	4
United States	31	598	4

Table 5. The top five countries for co-authoring

The United Kingdom whose authors have co-authored with eight countries is in the largest cluster with a set of ten connected countries. This cluster is displayed in Figure 7.

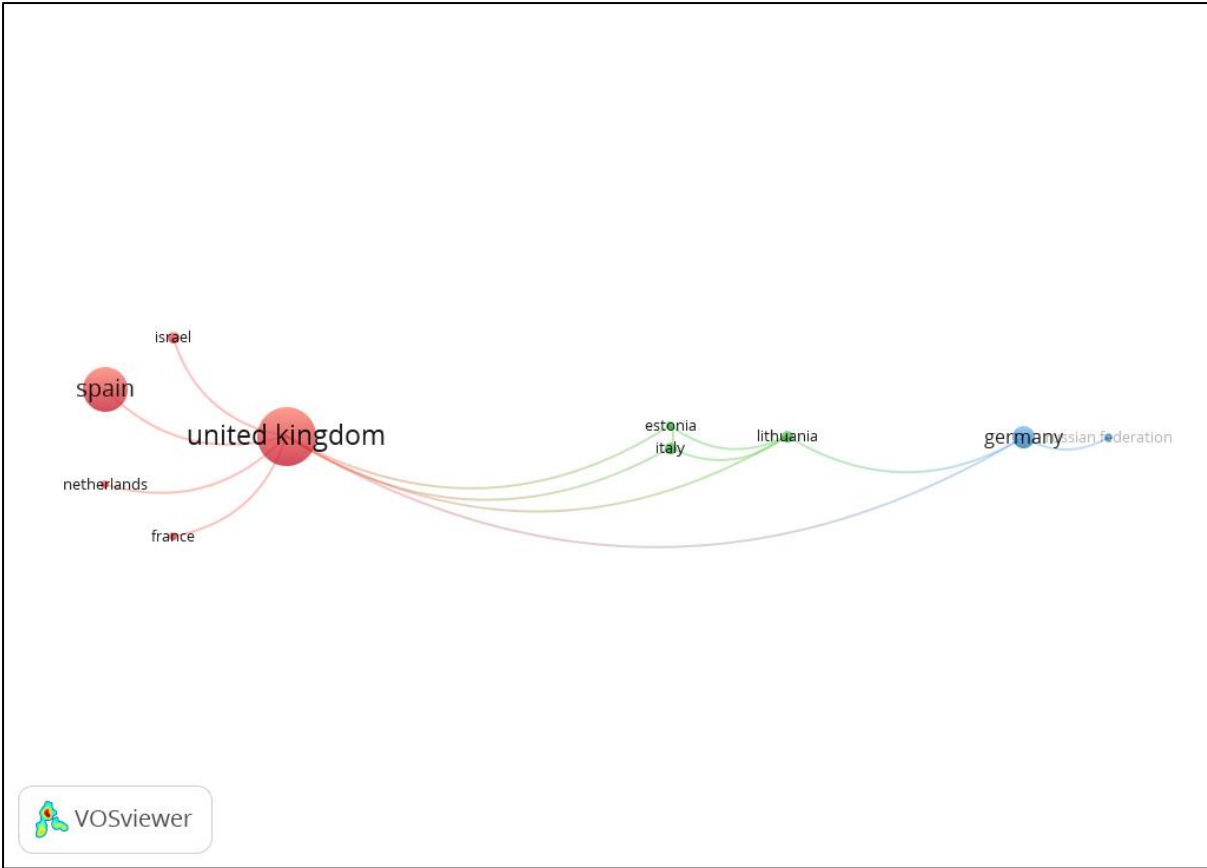


Figure 7 United Kingdom cluster co-authorship network

This United Kingdom cluster is part of the complete inter country co-authorship network map displayed in Figure 8. The size of the circles (and name) indicates countries who have co-authored with other countries to the greatest degree in a cluster. Note the lack of lines between the clusters indicating the clusters are isolated from each other.

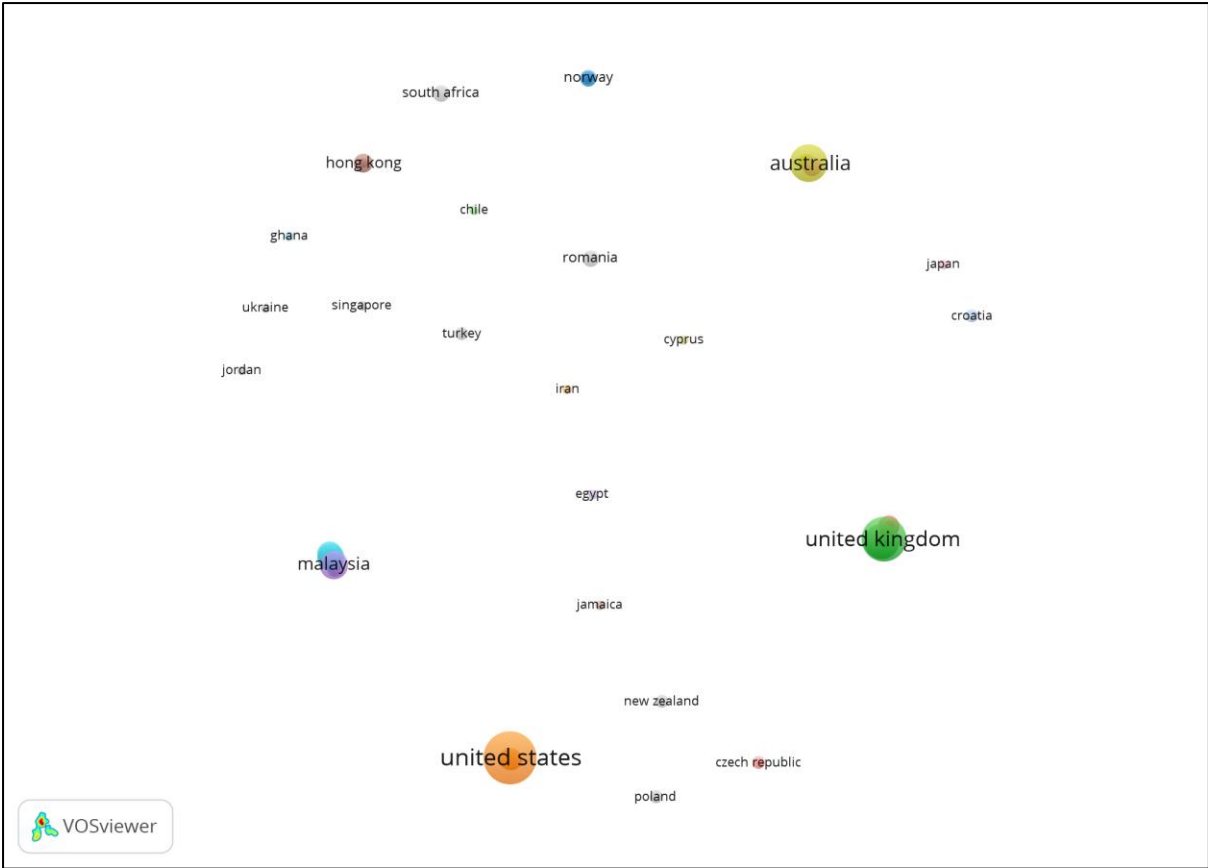


Figure 8 Inter country co-authorship network analysis

Q7. Which are the most frequently appearing keywords?

The keyword co-occurrence network analysis is conducted to find out which keywords have been most frequently used in the various papers in this study. Such an analysis helps to get an idea about which kind of topics and themes have been mostly focussed on by the researchers.

In Figure 9, the keyword co-occurrence network map is presented. There were a total of 670 keywords in the data set. In creating the network map, only those 48 keywords were selected, which appeared more than three times in the data set.

To determine the relatedness of the terms, the co-occurrences in the publications were analysed (Van Eck and Waltman, 2010). The map shows the 48 different keywords connected to each other with various lines. The lines represent that these keywords have co-occurred with each other in various papers in the data set. The distance between different terms is interpreted as an indication of the relatedness among the various keywords (Laudano et al., 2018). The lesser the distance appears between two or more terms, the stronger the terms are related to each other.

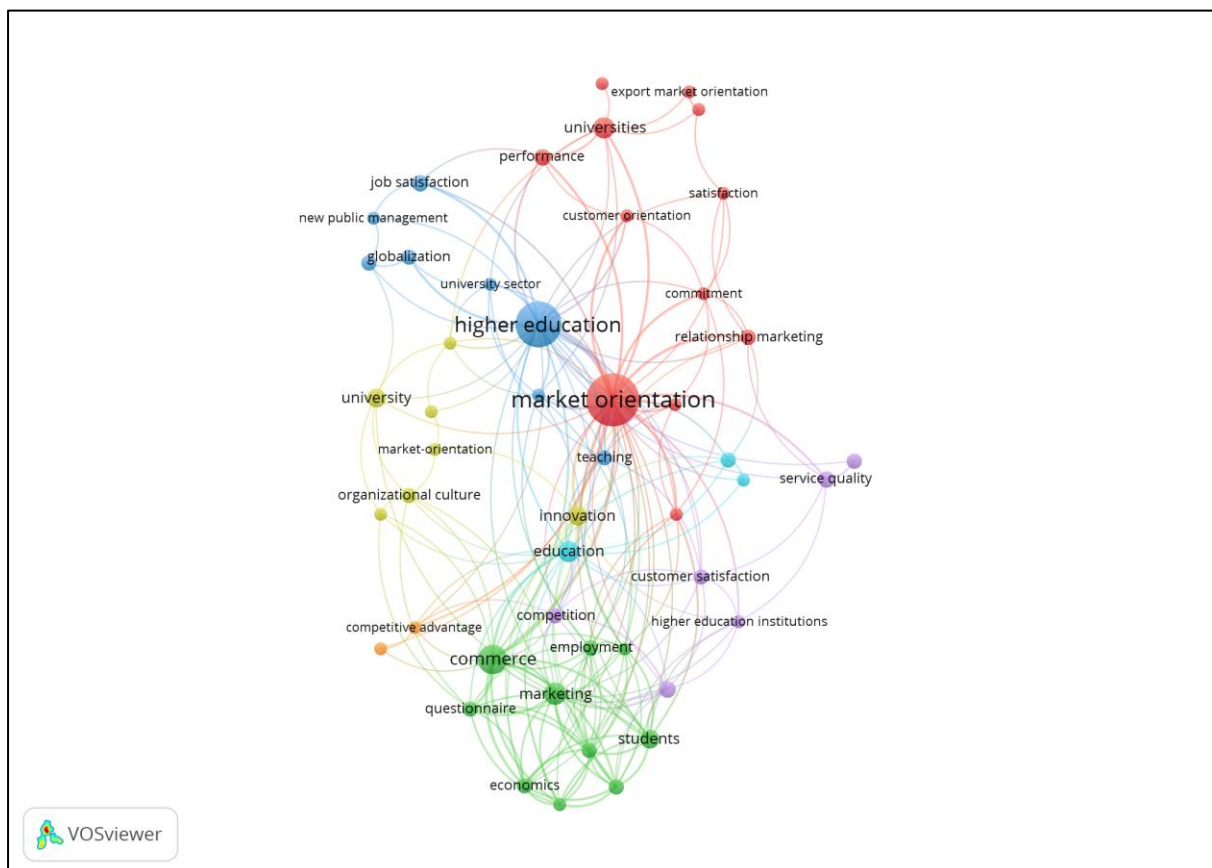


Figure 9 Keyword co-occurrence network analysis

The keywords which have appeared the maximum number of times, suggest that more research has been conducted on these areas. Table 6 presents the results. Thus, you can see not surprisingly the term market orientation (and or market-orientation or other synonyms) was mentioned as a keyword 46 times in the 170 publications. Furthermore, this keyword appears with other keywords 79 times.

Keyword	Occurrences	No. of times the keyword appears with another keyword
Market orientation	46	79
Higher education	36	56
Commerce	15	46
Marketing	9	31
Education	8	24
Universities	8	12
Innovation	6	14
Students	6	28
University	6	7
Job satisfaction	5	7
Performance	5	9
Service quality	5	9
Societies and institutions	5	15
Competition	4	12
Customer satisfaction	4	9
Economics	4	23
Employment	4	17
Engineering education	4	23
Globalization	4	5
Information management	4	26
Marketization	4	4
Organizational culture	4	7
Questionnaire	4	22
Relationship marketing	4	10
Student satisfaction	4	3
Teaching	4	11
Technology transfer	4	8
Academic capitalism	3	3
Commitment	3	9
Competitive advantage	3	7

Table 6. Most frequently occurring keywords

Q.8 Which citations, journals, authors have been co-cited to the greatest degree?

Co-citation analysis of citations, journals and authors assesses the relatedness or connection between items. This is established based on the frequency at which they are co-cited together in a published paper. Thus, the most relevant knowledge in a research area can be identified (Mao et al., 2020). With regards co-citation of citations, it connects documents on the basis of joint appearances in reference lists. Thus, indicating the importance of the citation as well as content that is likely to be related. Of the 8184 cited references in the 170 papers twenty-one have been cited a minimum of 4 times. Table 7 presents the number of times each of the twenty-one citations has been cited as well the number of times it appears with another one of the twenty-one citations. Thus, Jaworski and Kohli’s article ‘Market orientation: antecedents and consequences’ has been cited 10 times in the 170 documents and has been co-cited with another one of the twenty-one citations on 31 occasions in the 170 documents.

Cited Reference	Citations	Co-Citations in the top twenty-one citations
Jaworski, B.J., Kohli, A.K., Market orientation: antecedents and consequences (1993) <i>Journal of Marketing</i> , 57 (3), pp. 53-70	10	31
Narver, J.C., Slater, S.F., The effect of a market orientation on business profitability (1990) <i>Journal of Marketing</i> , 54 (4), pp. 20-35	10	31
Kohli, A.K., Jaworski, B.J., Market orientation: the construct, research propositions, and managerial implications (1990) <i>Journal of Marketing</i> , 54 (2), pp. 1-18	8	34
Kirca, A.H., Jayachandran, S., Bearden, W.O., Market orientation: a meta-analytic review and assessment of its antecedents and impact on performance (2005) <i>Journal of Marketing</i> , 69 (2), pp. 24-41	7	22
Narver, J.C., Slater, S.F., The effect of a market orientation on business profitability (1990) <i>Journal of Marketing</i> , 54, pp. 20-35	7	7
Caruana, A., Ramaseshan, B., Ewing, M.T., Do universities that are more market orientated perform better? (1998) <i>International Journal of Public Sector Management</i> , 11 (1), pp. 55-70	6	17
Flavian, C., Lozano, J., Organisational antecedents of market orientation in the public university system (2006) <i>International Journal of Public Sector Management</i> , 19 (5), pp. 447-467	5	20
Hemsley-Brown, J., Oplatka, I., Market orientation in universities: a comparative study of two national higher education systems (2010) <i>International Journal of Educational Management</i> , 24 (3), pp. 204-220	5	23
Kohli, A.K., Jaworski, B.J., Kumar, A., Markor: a measure of market orientation (1993) <i>Journal of Marketing Research</i> , 30, pp. 467-477	5	9
Anderson, J.C., Gerbing, D.W., Structural equation modeling in practice: a review and recommended two-step approach (1988) <i>Psychological Bulletin</i> , 103 (3), pp. 411-423	4	9
Cadogan, J.W., Diamantopoulos, A., Narver and Slater, Kohli And Jaworski and The market orientation construct: integration and internationalization (1995) <i>Journal of Strategic Marketing</i> , 3 (1), pp. 41-60	4	10
Conway, T., Mackay, S., Yorke, D., strategic planning in higher education: who are the customers? (1994) <i>International Journal of Educational Management</i> , 8 (6), pp. 29-36	4	3
Gray, B., Matear, S., Boshoff, C., Matheson, P., Developing a better measure of market orientation (1998) <i>European Journal of Marketing</i> , 32 (9-10), pp. 884-903	4	10
Guolla, M., Assessing the teaching quality to student satisfaction relationship: applied customer satisfaction research in the classroom (1999) <i>Journal of Marketing Theory and Practice</i> , 7 (3), pp. 87-97	4	7
Hammond, K.L., Webster, R.L., Harmon, H.A., Market orientation, top management emphasis, and performance within university schools of business: implications for universities (2006) <i>Journal of Marketing Theory and Practice</i> , 14 (1), pp. 69-85	4	21
Jaworski, B.J., Kohli, A.K., Market orientation: antecedents and consequences (1993) <i>Journal of Marketing</i> , 57, pp. 53-70	4	5
Kohli, A.K., Jaworski, B.J., Kumar, A., Markor: a measure of market orientation (1993) <i>Journal of Marketing Research</i> , 30 (4), pp. 467-477	4	10
Kotler, P., Levy, S.J., Broadening the concept of marketing (1969) <i>Journal of Marketing</i> , 33 (1), pp. 10-15	4	15
Vargo, S.L., Lusch, R.F., Evolving to a new dominant logic for marketing (2004) <i>Journal of Marketing</i> , 68 (1), pp. 1-17	4	13
Voon, B.H., Linking a service-driven market orientation to service quality (2006) <i>Managing Service Quality</i> , 16 (6), pp. 595-619	4	12
Voon, B.H., Servmo: a measure for service-driven market orientation in higher education (2008) <i>Journal of Marketing for Higher Education</i> , 17 (2), pp. 216-237	4	11

Table 7. Co-citation of citations

Of note here is that is that twelve of the citations in the table have a MO focus whereas eight of the citations have both a MO and HEI focus.

With regards to the co-citation of journals, 3815 sources or publications were cited in the 170 publications. Of these, 20 sources were cited 33 times or more. Figure 10 illustrates the co-citation of these sources. That is the most co-cited journals and the journals they were most co-cited with from the twenty most cited journals. The map shows the 20 different journals connected to each other with various lines. The lines represent that these journals have been co-cited with each other in various papers in the data set. The lesser the distance appears between two or more of the journals, the stronger the co-citation links.

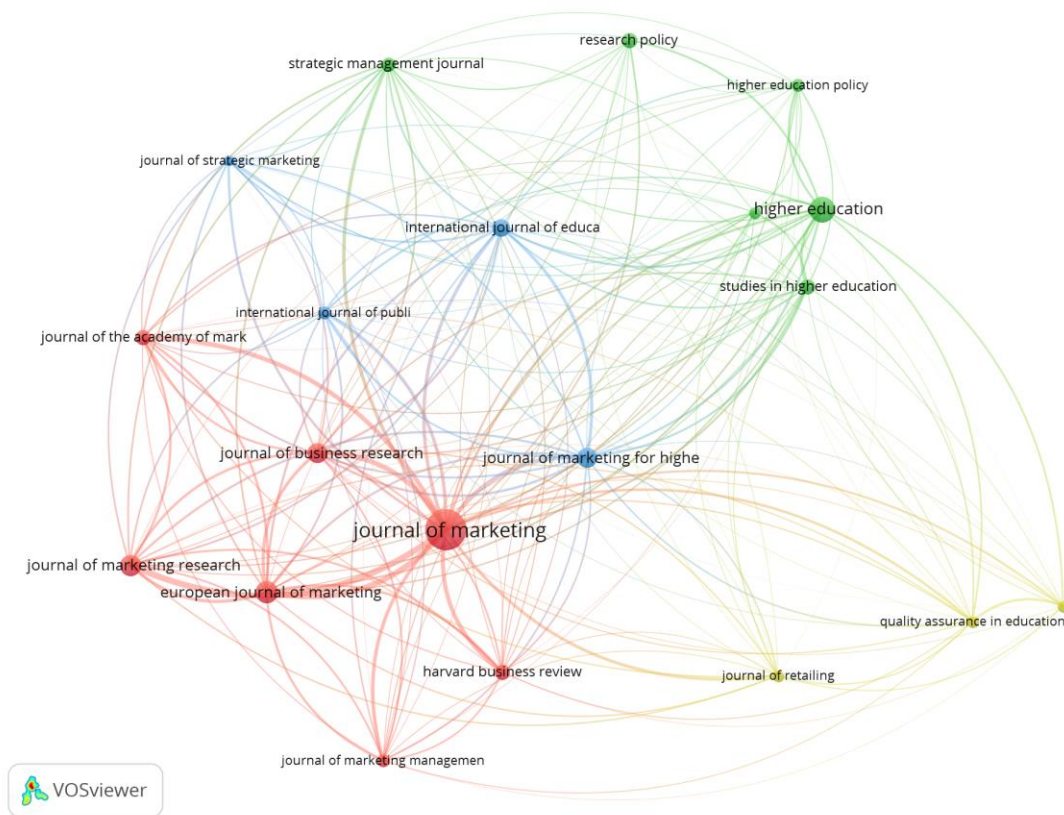


Figure 10 Co-citation of sources network analysis

Again, looking at the top twenty most cited journals in the citations of 170 publications Table 8 shows the number of times they were cited and the number of times the journal or publication has been co-cited within that top twenty list.

Source	Citations	Co-citations within the top twenty most cited journals
Journal of Marketing	443	6396
Higher Education	178	1567
European Journal Of Marketing	128	2730
Journal Of Marketing Research	120	2478
Journal Of Business Research	102	2141
Journal Of Marketing For Higher Education	101	2160
International Journal Of Educational Management	80	1708
Research Policy	67	354
Journal Of The Academy Of Marketing Science	66	1506
Studies In Higher Education	63	946
Harvard Business Review	61	1219
Strategic Management Journal	56	1055
International Journal Of Public Sector Management	48	1064
Journal Of Marketing Management	46	1096
Higher Education Policy	43	413
Higher Education Quarterly	41	559
Quality Assurance In Education	38	838
Journal Of Retailing	35	766
Total Quality Management	35	506
Journal Of Strategic Marketing	33	846

Table 8. Co-citation of top twenty most cited journals

The co-citation of authors within the 170 publications is presented in Table 9. A total of 8876 authors are cited in the 170 publications and 20 of those authors are cited 28 or more times. The most cited author in the 170 publications is Bernard Jaworski and this author is co-cited with other authors from the top twenty authors on 2129 occasions.

Author	Citations	Co-citations of authors within the top twenty most cited authors
Jaworski, B.J.	121	2129
Kohli, A.K.	115	2003
Narver, J.C.	107	1733
Slater, S.F.	105	1731
Kotler, P.	70	968
Deshpande, R.	51	832
Berry, L.L.	41	733
Oplatka, I.	41	728
Caruana, A.	40	873
Parasuraman, A.	40	659
Hemsley-Brown, J.	38	656
Farley, J.U.	36	589
Marginson, S.	35	212
Teichler, U.	31	73
Webster, R.L.	31	574
Zeithaml, V.A.	31	537
Etzkowitz, H.	28	101
Ewing, M.T.	28	669
Hammond, K.L.	28	517
Kumar, A.	28	540

Table 9. Co-citation of top twenty most cited authors

Discussion and conclusion

The Scopus database was used to identify 170 English language published articles or papers that focused on market orientation as it relates to higher education institutions.

The journal with the greatest number of publications in the area of MO in relation to HEIs is the Journal of Marketing for Higher Education with fourteen, Higher Education published thirteen papers and Studies in Higher Education five.

The highest number of papers were published in 2013 with 14 published and the second highest number in 2020 with 12 papers. Ninety-five of the 170 papers were published in the ten-year period between 2011 and 2020.

The most cited paper, in the Scopus database, totalling 136 citations is 'Entangled in academic capitalism? A case-study on changing ideals and practices of university research' by Oili-Helena Ylijoki from the University of Tampere Finland who is also the most cited author with 253 citations across three publications.

The top twenty most cited papers received 1707 citations in total with an average of 85 citations. The most cited journal is Higher Education with 656 citations from 13 publications. The second most cited was the Journal of Marketing for Higher Education with 388 citations from 14 publications. The third most cited journal was TQM Magazine with 104 citations from 1 publication.

The most prolific authors with seven publications are based in the joint most prolific educational institutions in the most prolific country the United States of America, that is Kevin L. Hammond, a Professor of Marketing at the University of Tennessee at Martin College of Business and Public Affairs and co-author Robert L. Webster Professor of Accounting at Ouachita Baptist University, Arkadelphia, Arkansas. The joint third most prolific authors with four publications are: Carlos Flavián a Professor of Marketing at the University of Zaragoza, Spain; Javier Lozano a Professor of Economics at the University of the Balearic Islands (a co-author of Carlos Flavián); and Harry Harmon of the University of Central Missouri (a co-author of Webster and Hammond).

The five most prolific countries are the United States (n=31), the United Kingdom (n=22), Australia (n=16), Spain (n=14) and Malaysia (n=9) accounting for 92 or 54% of all publications.

Twenty-five authors have co-authored at least two publications with Kevin L. Hammond and Robert L. Webster the joint most prolific co-authors working with 11 co-authors across his seven publications. Following these authors, Dr Yousra Asaad a senior lecturer in Marketing at Brunel University London has co-authored with eight authors across three publications.

There were a total 52 countries in the data set responsible for the 170 publications. Thirty-six of these countries had authors who co-authored with an author from another country. The authors of the United Kingdom were found to have co-authored with the greatest number of authors of other countries (n=8), with Australia (n=6), Malaysia (n=5), Lithuania (n=4) and the United States (n=4) in the subsequent positions.

There were a total 670 keywords in the data set of 170 publications with 48 keywords which appeared more than three times indicating the topics and themes have been mostly focussed

on by the researchers. Market orientation (and or market-orientation or other synonyms) was not surprisingly the most frequently occurring keyword mentioned 46 times in the publications.

Finally, the two publications which have been co-cited the greatest number of times are authored by Jaworski and Kohli (1993) and Narver and Slater (1990). The Journal of Marketing is the journal/publication co-cited to the greatest degree with Bernard Jaworski the most co-cited author.

The table below provides a summary of key bibliometric details.

Description	Result
No. of publications related to MO and HEIs	170
No. of years bibliometric analysis spans	30
No. of publications in the last ten years	95
No. of journals that have published more than one paper in this research area	16
No. of papers published by the most prolific journal	14
No. of citations within Scopus by the most cited paper	136
No. of citations within Scopus by the most cited author	253
No. of publications by the most prolific author	7
No. of publications by the most prolific HEI	7
No. of publications by the most prolific country	31
No. of co-authors by the most prolific co-author	11
No. of countries who have published in this research area	52
No. of countries the most prolific country has co-authored with	8
No. of keywords	670
No. of occurrences of the most frequently occurring keyword	46
No of references	8184
No. of sources/publications in the in the references	3815

Table 10. Summary of bibliometric details

This study has several limitations, which can also be considered as recommendations for future research. First, only the Scopus database was used for searching papers. Second, only English language and selected peer reviewed publications have been included in the bibliometric analysis with non-English language, conference papers, book publications and dissertations excluded. Third, no quality assurance of the publications beyond that undertaken by Scopus was undertaken. Considering these limitations, this study cannot be claimed as comprehensive. However, the present paper does present a credible bibliometric analysis mapping out the relevant literature in the field that can act as source for future studies.

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